



Applicant	James Leroy Snell	<b><u>SECOND</u></b> <b><u>SUPPLEMENTAL</u></b> <b><u>PRELIMINARY</u></b> <b><u>AMENDMENT</u></b>
Serial No.	10/005,483	
Filing Date	November 9, 2001	
Group Art Unit	2631	
Examiner Name	Unknown	
Attorney Docket No.	125.003USR1	
Title: HIGH DATA RATE SPREAD SPECTRUM TRANSCEIVER AND ASSOCIATED METHODS		

#13  
per Andy C  
5.1.03

Commissioner for Patents  
Washington, D.C. 20231

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OCT 31 2002

Prior to initial review, please amend the claims as follows:

**Technology Center 2600**

**IN THE CLAIMS**

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123. (Amended) A method of generating an rf signal for transmitting binary information in a packet format including a header field followed by a data field, comprising the steps of:

spread spectrum encoding a sequence of first data symbols from said binary information within said header field by combining said first data symbols with a spreading sequence generated at a predetermined chip rate;

encoding a sequence of N-bit second data symbols, where N is greater than 1, from said binary information within said data field by generating for each of said N-bit second data symbols one of a set of  $2^N$  chip sequences generated at the same chip rate as said spreading sequence; and

applying the spread-spectrum encoded symbols of said header field and the selected chip sequences of said data field to the I and Q inputs of a phase shift modulator to produce said rf signal.

124. (Amended) The method of claim 123 wherein each said chip sequence is generated by selecting an initial chip sequence in accordance with a first data segment of an N-bit second data symbol and differentially phase encoding said initial chip sequence in accordance with a second data segment of the same N-bit second data symbol.

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**OFFICE OF PETITIONS**

10/30/2002 TBESH1 00000012 502432 10005483  
01 FC:1201 168.00 DP  
10/30/2002 TBESH1 00000012 502432 10005483  
02 FC:1202 36.00 CH

Serial No.: 10/005,483

Filing Date: November 9, 2001

Attorney Docket No. 125.003USR1

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125. (Amended) A method of generating an rf signal for transmitting binary information in a packet format including a header field followed by a data field, comprising the steps of:

spread spectrum encoding a sequence of first data symbols from said binary information within said header field by combining said first data symbols with a spreading sequence;

encoding a sequence of N-bit second data symbols, where N is greater than 1, from said binary information within said data field by generating for each of said N-bit second data symbols one of a set of  $2^N$  chip sequences, each of said chip sequences being differentially phase encoded;

applying a reference phase based on encoding of the last of said first data symbols to the differential encoding of the first selected chip sequence; and

inputting said encoded symbols of said header field and said differentially encoded chip sequences of said data field to the I and Q inputs of a phase shift modulator to produce said rf signal.

126. (Amended) The method of claim 125 wherein each said chip sequence is generated by selecting an initial chip sequence in accordance with a first data segment of an N-bit second data symbol and differentially phase encoding said initial chip sequence in accordance with a second data segment of the same N-bit second data symbol.

132. (New) A method of encoding binary data for transmission in packet format along with information encoded at a predetermined spread spectrum chip rate, said method comprising the steps of:

grouping said binary data into N-bit symbols;

applying a K-bit segment of each N-bit symbol to a chip sequence generator to select one of  $2^K$  chip sequences, wherein each chip sequence is M chips in length and is a composite of an M-bit basic sequence and an M-bit modification sequence;

rotating the phase of the selected chip sequence in accordance with an N-K bit segment of the same N-bit symbol that selected said chip sequence; and

Serial No.: 10/005,483

Filing Date: November 9, 2001

Attorney Docket No. 125.003USR1

Title: HIGH DATA SPREAD SPECTRUM TRANSCEIVER AND ASSOCIATED METHODS

transmitting each phase-rotated, selected chip sequence at said predetermined chip rate.

133. (New) A method of encoding binary data for transmission in packet format along with information encoded at a predetermined spread spectrum chip rate, said method comprising the steps of:

grouping said binary data into N-bit symbols;

applying a K-bit segment of each N-bit symbol to a chip sequence generator to select one of  $2^K$  chip sequences, wherein each chip sequence is M chips in length;

combining the selected basic chip sequence with a fixed, M-chip modification sequence to produce a selected M-chip composite chip sequence;

rotating the phase of the selected M-chip composite chip sequence in accordance with an N-K bit segment of the same N-bit symbol that selected said basic chip sequence;  
and

transmitting each phase rotated, selected composite chip sequence at said predetermined chip rate.

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